

Thermal storage is very relevant for technologies that make thermal use of solar energy, as well as energy savings in buildings. Phase change materials (PCMs) are positioned ...

Phase change material (PCM)-based thermal energy storage significantly affects emerging applications, with recent advancements in enhancing heat capacity and cooling power. This perspective by Yang et al. ...

Phase change materials (PCMs) have been envisioned for thermal energy storage (TES) and thermal management applications (TMAs), such as supplemental cooling for air-cooled condensers in power plants (to ...

Thermal energy storage based on phase change materials (PCMs) can improve the efficiency of energy utilization by eliminating the mismatch between energy supply and demand. It has become a hot research ...

Thermal energy storage technologies utilizing phase change materials (PCMs) that melt in the intermediate temperature range, between 100 and 220 °C, have the potential to mitigate the intermittency issues of wind and ...

Global energy demand is rising steadily, increasing by about 1.6 % annually due to developing economies [1] is expected to reach 820 trillion kJ by 2040 [2]. Fossil fuels, including natural ...

Photothermal phase change energy storage materials (PTPCESMs), as a special type of PCM, can store energy and respond to changes in illumination, enhancing the efficiency of energy systems and ...

Conventional phase change materials struggle with long-duration thermal energy storage and controllable latent heat release. In a recent issue of *Angewandte Chemie*, Chen et ...

Energy Storage is a new journal for innovative energy storage research, covering ranging storage methods and their integration with conventional & renewable systems. Abstract This paper ...

Phase change materials (PCMs) are considered green and efficient mediums for thermal energy storage, but the leakage problem caused by volume instability during phase change limits their application. Encapsulating ...

4 °C; Energy storage is an effective means to address rising energy consumption, and phase change materials (PCMs) can effectively improve energy storage efficiency and utilize ...

Green phase change energy storage materials

Phase-change materials (PCMs) are essential modern materials for storing thermal energy in the form of sensible and latent heat, which play important roles in the efficient use of waste heat and solar energy. In the ...

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